CHILTON'S

JANUARY 1987

C2150-6
1/22/87

FOOD ENGINEERING

SINCE 1928, THE SOURCE ON PROCESSING, PACKAGING, AND PRODUCT DEVELOPMENT

COMPETING IN A GLOBAL ECONOMY

Analytical Flavor Testing

IEFP Pre-Show

PMMI Post-Show

FOOD ENGINEERING

注册商标

COVER STORY

The U.S. ecomony has been replaced by a global economy. Today, American food processors are grappling with a global economy just like their colleagues in many other industries.

Permission to photocopy for internal use or the internal use of specific clients is granted by Chilton Company for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $1.00 per copy of the article, plus 25¢ per page is paid directly to the CCC, 21 Congress St., Salem, MA 01970. Special requests should be addressed to The Editor. (0193-323X/85 $1.00 + 25¢)

FOOD ENGINEERING® (ISSN 0193-323X) January 1987, Vol. 59, No. 1. Published monthly by Chilton Company, Chilton Way, Radnor, Pa. 19089 (Telephone 215/964-4000). Chilton Co. is a division of American Broadcasting Companies, Inc., New York, N.Y. Second Class Postage Paid at Wayne, Pa. 19087 and additional mailing offices. Title registered in U.S. Patent Office ™Chilton Company, 1987. All rights reserved.

POSTMASTER: Send form 3579 to Food Engineering, Post Office Box Number 2035, Radnor, PA 19089.

News

14 Industry Report
This month's Report discusses power realignments due to industry mergers, acquisitions and divestitures; FDA clearance of four more food categories; how family spending for food is linked to employment in the tobacco industry; and FDA labeling regulations for cholesterol.

Departments

9 Editorial
10 Calendar
14 Industry Report
35 Marketplace
43 Packaging
226 New In Print
229 People
234 Mergers/Acquisitions
235 Capital Capsules

CALCIUM-ENRICHED: PAGE 35

Features

76 Global Economy
The role of the United States in the world food market has shifted radically from that of supplier to consumer—of food, food capital and food technology. Can we regain a competitive edge?

93 IEFP Pre-show
Records are expected to fall when the IEFP show opens for the first time in two years.

97 PMMI Wrap-up
The PMMI Show, held at New York's Jacob Javitz Center, gave anyone interested in packaging machinery or materials all they could handle.

106 Flavor Testing
Advances in analytical instrumentation— especially better information handling, greater sensitivity, and advances in dedicated computers—are having a major impact on flavor research. Studies have been made in both quality control and research and development areas.

115 China Trade
Food companies have found China difficult, but who ever said a vast opportunity would be easy?

CHINA TRADE: PAGE 115

CHILTON FOOD GROUP

Engineered Foods

56 Surimi
U.S. surimi usage grew from zero five years ago to over 100 million pounds in 1986 and this figure is expected to rise.

61 Carrageenan in Pet Foods
New product ideas often come from other countries. Meat-in-jelly type pet foods, common in Europe, may appeal to U.S. pets.

68 Stabilizers
A stabilizer has been specifically developed for peanut butter which functions under a variety of conditions.

70 Aspartame
Aspartame's approval in four new food categories spurred much activity – including the patenting of frozen dessert formulas.

73 Literature

SURIMI: PAGE 56

New Equipment

210 Processing Equipment
215 Instruments/Quality Control
220 Packaging Equipment

Supply Line

Field Reports

118 A management strategy for planning your plant automation.
122 Aseptic processing system handles juices, purees, particulates.
124 Outside auditors monitor product quality and spot problems.
125 Steam-in-place techniques make aseptic lines "clinically sterile."
128 Synchronous belt drives reduce production downtime.

QUALITY CONTROL: PAGE 124

Special Emphasis

INSTRUMENTATION ADVANCES BENEFIT FLAVOR INDUSTRY

Advances in instrumentation and methodology are enabling the flavor industry to detect frauds.

Pages 106 to 113

Mergers/acquisitions activity produces power realignments

Mergers, acquisitions and divestitures in most areas of the food industry were up 3.6 percent over the last nine months, according to a report from The Food Institute.

The industry's restructuring continues, for example, to produce significant power realignments in the soft drink industry. Coca-Cola acquired JTL Bottling and the bottling operations formerly owned by Beatrice – creating a major company-controlled bottling network that is to be partially spun off into a separate operation. And PepsiCo acquired the Kentucky Fried Chicken chain from Nabisco.

Each of the two soft drink giants also made purchases north of the border: Coca-Cola purchased the Canada Dry operations in Canada from Cadbury Schweppes, while PepsiCo acquired the Seven-Up operation in Canada, as well as the bottling rights worldwide, excluding the U.S.

At the same time in the soft drink industry, the investment firm of Hicks & Haas engineered the acquisition of Dr Pepper from Forstman Little. Hicks & Haas also owns A&W Root Beer Brand. Recently, Hicks & Haas acquired Seven-Up from Philip Morris, creating a new soft drink empire.

And another contender in the soft drink industry, RJR Nabisco, sold its soft drink operations.

Quaker sets record

Another major food processor, Quaker Oats, outbid rival Ralston Purina for Anderson Clayton & Co., primarily for its Gains pet foods business, leaving the fate of other food properties, such as Chiffon margarine and Seven Seas salad dressing, undetermined at this time. Approximately $800 million was spent in acquiring Anderson Clayton, setting a new record for Quaker. Earlier this year, Quaker had acquired Golden Grain Macaroni Company for $250 million.

In the food service industry, the largest acquisition of 1986 so far has been the purchase of Saga Corp. by Marriott, making Marriott the nation's largest contract food service firm.

Food Business Mergers & Acquisitions

First Nine Months – 1986

Category	Total No. of Acquisitions
Bakers	12 (12)
Brewers	6 (4)
Confectioners	5 (2)
Dairy Processors	6 (13)
Diversified Firms with interests in the food industry	34 (23)
Food Processing Firms	75 73)
Poultry Processors	8 (6)
Primary Product Cos.	14 (8)
Retailers	
Convenience	16(17)
Supermarket	28 (14)
Other	9 (6)
Seafood Processors	3 (2)
Snack Food Processors	1 (7)
Soft Drink Bottlers	11 (11)
Sugar Refiners	2 (2)
Total	230 (207)

Note: The numbers in parentheses indicate number of transactions through the first nine months of 1985.

Source: The Food Institute

Food industry mergers and acquisitions were higher than any previous nine-month period. Here is the total for the first nine months of 1986.

Supermarket activity up

The Food Institute's nine month record shows that activity in the supermarket industry is running at a rate twice that of the same period in 1985. The number two U.S. supermarket chain, Safeway Stores, was taken in a leveraged buyout by the investment firm of Kohlberg, Kravis, Roberts & Co. Kroger, the leading U.S. supermarketer, is divesting its drug store operations. Stop & Shop Companies also sold its drug store and tobacco shop businesses.

The industry was busy in New York where the Great American Atlantic & Pacific Tea Company purchased the Shopwell chain, adding 53 stores in the metropolitan New York market. Also in New York, the Gristede chain of 36 units was sold by Southland Corporation to Red Apple Supermarkets.

Tax program gives businesses a break

The new tax bill will make the federal Targeted Jobs Tax Credit Program more important than ever, according to a California firm specializing in helping companies fight tax red tape.

The federal program allows employers to claim a tax credit of 40 percent of the first $6,000 in wages paid to employees in specific groups, as long as the application is filed before the employee begins work.

According to The Alameda Company, Alameda, CA virtually any business that hires entry level employees can benefit, but as few as 4-5 percent use the credit because they dislike the paperwork.

Sixty-five percent of the eligible new hires are people 18 to 24 years old with low incomes. Others are Vietnam veterans, handicapped persons, and general assistance recipients.

Food Bank distributes surplus foods

Food companies, who manufacture too much food, over or underfill packages that can't be used, or are left with food that just doesn't look right,

By donating surplus food to a food bank, companies can avoid destroying food that cannot be sold to consumers, but is still edible.

Sugar: Has it taken a bad rap for too long?

Sugar: How Much Consumers Eat Every Day

Sugar Type	Daily Intake grams/day	% of Total Calories
Fructose		
Added	10	2
Naturally occurring	7	2
TOTAL*	16	4
Sucrose		
Added	28	6
Naturally occurring	13	3
TOTAL	41	9
Sugars from corn sweeteners		
HFCS	19	4
Others	6	1
TOTAL*	24	5*

Total is not equal to the sum of "added" and "naturally occurring" due to rounding.

SOURCE: Sugars Task Force, FDA

This chart shows the amounts of both added sweeteners and naturally occurring sweeteners being consumed daily.

The Food and Drug Administration is making confectioners smile. In a report compiled by the FDA Sugars Task Force, the agency contends that, yes, carbohydrate sweeteners are safe.

Thanks to the news, sugar can no longer be called "sweet and dangerous" or "pure, white and deadly," contends the Sugar Association, Inc. "The report is good news because it unequivocally sets the record straight," says Sugar Association head, Jack O'Connell.

The task force, which evaluated all the safety data available on carbohydrate sweeteners, found that the only negative side effect of sugar is something we've known all along: it contributes to dental caries. The group also addressed these health issues:

- Does sugar cause diabetes? Evidence says no, and, according to the Sugar Association, researchers are now questioning the rationale for sugar-restricted diets, once automatically recommended for diabetics.
- Does sugar make children hyperactive? Again, evidence says no.
- Does sugar consumption contribute to obesity? Evidence shows that no one food is responsible for obesity, and even suggests that lean people tend to eat more sugar then overweight persons do.
- Can consumers eat sugar and not worry about nutrient deficiencies? Yes, says the report.

Concludes the study: Carbohydrate sweeteners, consumed at today's levels (see accompanying charts), do not pose a health hazard.

Caloric Sweeteners

U.S. Per Capita Consumption in Pounds 1980-1986

	Sugar, Refined	HFCS	Glucose	Dextrose	Honey	Edible Syrups	Total
1980	83.6	19.1	17.6	3.5	0.8	0.4	125.0
1981	79.4	23.2	17.8	3.5	0.8	0.4	125.1
1982	73.7	26.7	18.0	3.5	0.9	0.4	123.2
1983	71.1	30.7	18.0	3.5	0.9	0.4	124.6
1984	67.6	36.3	18.0	3.5	1.0	0.4	126.9
1985	63.3	43.5	18.0	3.5	1.0	0.4	129.7
1986*	60.9	44.7	18.0	3.5	1.0	0.4	128.5

*estimated
SOURCE: Economic Research Service, USDA

A recent FDA task force study concludes that carbohydrate sweeteners consumed at today's levels do not pose a health hazard.

95% fat-free beef to be marketed

Completely chemical-free beef with 5 percent less fat than chicken is to be distributed in the Maryland and D.C. area by Mash's Meats of Baltimore and Landover. "UltraBeef" is up to 46 percent lower in fat than corresponding cuts of beef, translating into a calorie content of only 120 calories per 3-ounce serving. (See *FE*, Oct., p. 66.)

The cost-competitive beef is produced via a controlled breeding and selection process. Chesapeake Genetics, Inc., Centerville, MD established a joint venture with UltraBeef Ranches, Inc., based in South Dakota, with the two companies pooling knowledge and resources on cattle breeding. The companies exercise quality control over every step, beginning with breeding and production, and continuing through retail marketing.

Transplanted embryos

The program uses only Simmental bulls, known for their ability to produce lean beef without loss of quality grade. The procedure uses embryos transplanted from "donor" cows into the wombs of other cows which act as surrogate mothers. This frees the donor cows to produce as many as 30-40 calves per year—all with superior genetics. UltraBeef calves reach slaughter weight (1150-1250 pounds) by 13 or 14 months of age, 7 to 11 months earlier than other cattle.

California passes bottle bill alternative

California's new recycling act is a compromise between traditional forced deposit legislation and voluntary recycling. The program has a one

(Continued on next page)

(Continued from previous page)
cent redemption value on containers and is designed to provide an incentive to recycle all products, not just beverage containers.

Under the new law, consumers who return containers to recycling centers are guaranteed at least a penny returned, and possibly more if the market price of aluminum and glass dictates it. The goal is to recycle 65 percent of all glass, aluminum and plastic beverage containers. According to the author of the bill, only 10 percent of glass bottles, 50-60 percent of aluminum cans and 2 percent of plastic bottles are now recycled.

The bill contains a series of "penny triggers" that will gradually increase the redemption value, beginning with one cent, and potentially rising to two cents by 1989 and three cents by 1992. The triggers will take effect only if the 65 percent recycling rate is not reached for each container.

Study reviews changes in food retailing market

According to a report from the Food Institute, sales by food retailers, both food stores and commercial eating and drinking places, should amount to $430 billion for 1986. The Institute's latest annual report on the food retailing industry, "Food Retailing Review: 1986," analyzes changes in consumer spending, income growth, food prices, and performance at retail food stores and commercial eating and drinking places.

According to Frank Panyko, Institute vice president, "New forces are at work in the marketplace, with convenience being the key for two-income households, singles, and other identifiable consumer groups."

The study tracks the changing product mix at grocery stores (and the impact on retailing), citing data on product movement, and a feature highlighting the leading restaurant chain firms. Also included are the Food Institute's annual compilations on the top 20 supermarket companies, per capita food store and eating out spending by region, as well as a review of additional research produced throughout the industry.

The report is available from the Food Institute at 28-12 Broadway, Fair Lawn, NJ 07410.

Food Engineering to begin co-sponsoring seminars

In an effort to support the broad and detailed delivery of manufacturing technology information pertinent to the food industry, *Food Engineering* magazine will begin co-sponsoring short courses to be given by the Center for Professional Advancement located in East Brunswick, NJ. The Center has been active since 1967 in intensive two- to five-day courses in applied industrial technology, and currently carries 500 on its books. Over thirty of those are food technology and related courses, everything from "Food Microbiology" to "Retortable Food Packaging."

The Center's main classrooms are located in East Brunswick, but it also offers in-company courses that can be given at a food maker's facility, as well as offering executive briefings: One-day meetings for senior management on leading-edge topics that will impact the food industry in the future. Over the last several years, CPA has become active in Europe, offering courses out of its Amsterdam offices.

Said a *Food Engineering* spokesman, "We think this is the right fit at the right time. CPA is looking to deliver the same kinds of information to the same kinds of people in the same ways that the magazine is. But they can do it in greater depth and with greater personalization. Our co-sponsorship is a natural extension of what we do now. It is part of a total industry commitment that goes much further than just publishing the magazine."

The first block of courses to be offered under *Food Engineering*'s co-sponsorship will be:

- "Baking Technology"—Feb. 9-12
- "Confectionary and Chocolate Production"—Feb. 23-26
- "Sensory Evaluation"—March 2-5
- "Food Texture Technology"—March 9-11
- "Nutritional Aspects of Food Processing"—March 9-11
- "Moisture Management in Food Systems"—March 19-20.

For additional information on these courses, contact The Center for Professional Advancement, P.O. Box H, East Brunswick, NJ 08816-9987. Phone: 201-238-1600. Telex: 139303 (CENPRO EBRW).

Tobacco industry controls more than $3.3 billion in U.S. food processing

According to a study by Chase Econometrics, Philadelphia, PA, family spending for food in the United States is linked to employment in tobacco, its supplying sectors and the providers of their consumer goods and services. Altogether the tobacco industry accounted for $3.32 billion in food processing and production gross receipts in 1983, the latest year for which complete information is available. These gross receipts also indirectly supported 6,000 food processing jobs paying $62 million in wages and fringe benefits, Chase added.

The $3.32 billion in successive consumer spending on processed food production represented almost 1.2 percent of the total value of manufactured food production in 1983.

The recent acquisitions of General Foods and Nabisco Brands by tobacco firms will increase these figures.

Tobacco Industry Importance to Food Processing Industry
(1983 production in $millions by industry segment)

Meat packing	$437
Cheese	205
Fluid milk	185
Bottled & canned soft drinks	173
Bread & cake	146
Frozen fruits & vegetables	132
Poultry dressing	96
Shortening & cooking oils	79
Fresh & frozen fish	64
Flour & grain mill products	60
Rice milling	47

The tobacco industry has generated $3.32 billion in gross receipts for the food industry in 1983. The chart indicates a partial breakdown of these receipts.

GRAPPLING WITH A GLOBAL ECONOMY

The role of the United States in the world food market has shifted radically from that of supplier to consumer—of food, food capital and food technology. Can we regain a competitive edge?

Once "the world's market basket" as the leading exporter of food, the United States is now a net *importer* of food. The nation's 1986 agricultural trade surplus of $5.4 billion was offset—though marginally—by a $5.6 billion trade deficit in processed foods.

Once a cornucopia of capital for building food industries abroad, the U.S. food industry now attracts more foreign investment than it spends abroad. Foreign ownership of the U.S. food industry now exceeds American ownership of food industries overseas by nearly $1.9 billion.

Once the technological genius of the globe, the U.S. has watched its technology base erode in favor of foreign competition. Most new food processing and packaging technology now comes from overseas. Major reason: Our top competitors outspend us in R&D. "The Germans, the French, the Japanese are all spending about 2 percent of their GNP on (non-military) R&D; we spend about 1-1/2 percent," said Dr. Lester C. Thurow, professor of economics at the MIT Sloan School of Business, at the 1986 National Food Processors Association convention in Atlanta. "We spend most of ours on new products; our competitors are spending a much larger fraction on *new processes*." Thurow's Axiom: "A German engineer with money is better than an American engineer without money."

CHARLES E. MORRIS
Midwest Editor

Pepsi-Cola recently started its second bottling plant in China. (Source: Pepsico)

Bottom line: "The American economy has died, and has been replaced by a world economy," said Thurow.

American food processors today are grappling with a global economy just like their colleagues in the automotive, consumer electronics, machine tool and semiconductor industries—all high-tech, not "smokestack" industries.

On the farm front, in spite of export incentives built into the 1985 Farm Bill, "many observers still have doubts about whether U.S. agriculture will be able to recapture international markets," said Robert L. Thompson, Assistant Secretary of Agriculture for Economics, at a conference ad-

Value of foreign investment in U.S. food industry doubled in the past five years, reflecting in microcosm the shift of the United States from creditor to debtor nation.

The Shifting Pattern: Foreign Ownership of U.S. Food Industry Surpasses U.S. Ownership of Foreign Food Industry
(Billions of dollars)

	1981	1982	1983	1984	1985
U.S. direct investment abroad	N/A	7.63	7.66	8.16	9.30
Foreign direct investment in U.S.	5.72	6.64	7.45	8.27	11.17

Source: U.S. Dept of Commerce

dressing the competitive position of Southern agriculture, November 5 in Atlanta. "[They] ask whether U.S. agriculture has permanently lost its international competitiveness."

The Big Question: Faced with an incredible federal budget deficit (a record $220.7 billion in fiscal 1986); an immense trade deficit (projected by Secretary of Commerce Malcolm Baldridge at a record $172 billion for 1986) and slower productivity growth (0.3 percent vs. 3 to 5 percent for our major foreign competitors in 1985)—can the U.S. compete in the world marketplace?

Money magnet

According to Commerce Department figures published in August 1986, foreign direct investment in the U.S. food industry now exceeds U.S. direct investment in the food industry abroad, reflecting in microcosm the shift of the United States from a creditor to a debtor nation.

As shown in the accompanying table, foreign investment in the U.S. food industry nearly doubled from $5.7 billion in 1981 to $11.2 billion in 1985; it surpassed U.S. food investment abroad in 1984 and by 1985 exceeded U.S. overseas investment by $1.9 billion. Major reason for the leap in 1985: Nestle's $3 billion acquisition of Carnation.

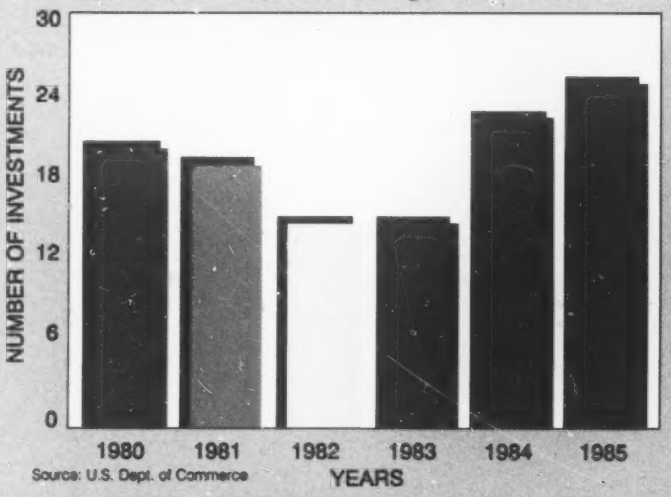
Reasons for the influx of foreign capital:

- The strength of the dollar in the early '80s. High interest rates here attracted foreign investment. (This further bolstered the dollar and made U.S. products more costly abroad, contributing to the decline in U.S. exports.)
- U.S. economic recovery following the 1981-82 recession, which continued to make U.S. investment attractive even when interest rates declined.
- The profitability of the U.S. food industry. U.S. packaged food stocks have outperformed the market since 1980 and in 1984 passed the S&P 500 in actual as well as relative performance. Net income of a group of packaged-food companies, tracked by the Chicago investment consulting firm Duff & Phelps, grew from slightly under $2 billion in 1981 to $2.4 billion in 1985, will increase by 10 percent in 1986 "and double that next year (1987)" to about $3.2 billion, said Vice-President John C. Bierbusse at a Duff & Phelps investment conference Nov. 7th.
- Huge trade surpluses in major EEC nations and Japan, which have generated the funds for foreign investment. Japan will record a 1986 trade surplus of about $86 billion, West Germany about $51 billion.

According to the International Trade Administration (ITA), these factors supplemented traditional reasons—a large, homogenous market and political stability, for example—for investing in the U.S. Although the dollar fell 36 percent against key foreign currencies between February 1985 and October 1986 to reduce the value of income from investments in the U.S., "direct investments typically represent a

(Continued on page 78)

Number of Foreign Investments In The U.S. Food Industry, 1980-85



Source: U.S. Dept. of Commerce

International Food/Beverage Sales
Selected U.S. Companies (Latest Fiscal Year)

Company	Int'l Food/ Bev. Sales ($ Millions)	% Total Food Bev. Sales	% Food Assets Abroad
Beatrice[1]	1,700	29.3	10
Borden[2]	361	11.3	—
Campbell Soup	890	20.3	27
Coca-Cola	3,000	62	25
General Foods[3]	2,000	20	—
Heinz	1,601	37	39
Kellogg	855	29	40
Kraft	1,733	24.5	33
Pepsico[4]	952	11.8	18
Pillsbury	434	14.3	9.5
Quaker Oats[5]	821	22.4	—
Ralston Purina[6]	753	12.8	9.5

Notes:
[1] FY '85, prior leveraged buyout
[2] Includes non-food consumer products; excludes Canada
[3] General Foods only, not including beverage operations of Philip Morris
[4] Includes restaurants
[5] Not including Canada
[6] Includes feed, pet foods

Sources: Annual reports; companies

long-term commitment to do business in the U.S. and thus do not appear to be materially influenced by short-term fluctuations in the value of the dollar," said the ITA.

Foreign Invasion

As shown on the accompanying graph, foreign investments in the U.S. food industry jumped from 13 transactions in 1983 to 23 in 1984 and edged-up to 25 in 1985. Of the 23 identified by the ITA in 1984, 11 had known values totaling $146.9 million. Only eight of the 25 transactions recorded in 1985 reported values, but these totaled $3.2 billion because of the Nestle/Carnation deal.

Foreign investments are tabulated on

(Continued on page 80)

More value-added commodities such as flour, soybean meal, soybean oil and corn gluten must be shipped to boost the value of U.S. agricultural exports. (Photo: Staley Continental)

Top 20 Foreign Food Firms in U.S.—1982
(More than 50% foreign owned)

Company	Country	Products/Operations	Est. U.S. Employment
Nestle Alimentana*	Switzerland	Cheese, canning, frozen specialties, chocolate, candy, coffee, yogurt, tea	6,367
United Biscuit Holdings**	UK	Baking, cookies, crackers	5,600
Grand Metropolitan, Ltd.	UK	Pet foods, soft drinks	5,302
Unilever, Ltd.	UK Netherlands	Ice cream, canned specialties, seasonings, corn milling, macaroni, tea, dried soup, margarine	4,079
Seagram Co., Ltd.	Canada	Alcoholic beverages	2,864
Imperial Group, Ltd.	UK	Poultry processing, feed, ice cream, candy	2,777
Hanson Trust, Ltd.	UK	Meat packing, animal oils	2,228
Cadbury Schweppes***	UK	Canning, candy, chocolate, soft drinks	2,160
Northern Foods, Ltd.	UK	Meat processing	2,105
Reckitt & Colman, PLC****	UK	Wine, mustard, seasonings, instant potatoes	1,988
Allied Lyons, PLC	UK	Ice cream, flour, tea, chips	1,664
Rank, Hovis & MacDougall, Ltd.	UK	Canning, pasta products	1,463
Bunge Group	Belgium	Corn milling, soybean processing	1,346
Dalgety, Ltd.	UK	Frozen fruits & vegetables, flour mixes	1,028
Suntory, Ltd.	Japan	Soft drink bottling	728
Henkel, Kgaa	West Germany	Canned mushrooms, salad dressings, soft drinks	727
Tengelmann	West Germany	Coffee, baking, fluid milk, frozen fruit	716
Canadian Pacific, Ltd.	Canada	Animal & vegetable oils	711
Kyokuyo Co., Ltd.	Japan	Canned fish	705
Koninklijke Wessanen NV	Netherlands	Dairy products	693

*Prior Carnation acquisition
**Prior acquisition by Imperial Group Ltd.
***Prior Canada Dry and Sunkist Acquisitions
****Prior Acquisition of Durkee from Hanson Trust
Source: USDA, 1985 (Based on 1982 data)

these pages as follows:
1.) Foreign investments in the U.S. food industry, 1984-85. Of the 48 transactions identified, 28 were acquisitions or mergers, two were joint ventures. The others involved equity increases, new-plant construction or expansions of existing plants.
2.) Foreign acquisitions in the U.S. food industry, 1986. This lists acquisitions only as tracked by The Food Institute through mid-November, when this story went to press.

But, as in 1984-85, there were other foreign investments in 1986 beyond acquisitions. A few examples:

• Heartland Lysine, a Chicago-based joint venture between Ajinomoto of Japan and Eurolysine of France, started up a new lysine plant early in 1986 at Eddysville, IA.

• Golden Cheese Co. of California (*FE*

Foreign Investments in U.S. Food Industry—1984-85

Year	U.S. Firm	State	Product(s)*	Foreign Investor	Nation	Type Investment	Value ($ millions)
1984:	Barengo Winery (Vinegar Div.)	CA	Vinegar	Nakano Vinegar Co.	Japan	Acquisition/merger	—
	Bartlett Springs	CA	Soft drinks	Nestle	Switz.	Acquisition/merger	5
	Canada Dry (franchise)	NH	Soft drinks	Kirin Brewery	Japan	Acquisition/merger	11.5
	Chateau Elan	GA	Wine	Pandoz, Donald	Ireland	New plant	12
	Chateau St. Jean	CA	Wine	Suntory	Japan	Acquisition/merger	40
	Dhul Corp.	CA	Ice cream, frozen desserts	Dhul Corp.	Spain	New plant	—
	El Molino Mills	CA	Flour, meal	Booker McConnell PLC	UK	Acquisition/merger	5
	Fanny Farmer Candy Shops	OH	Candy, confections	Poulain Industries	France	Acquisition/merger	—
	Heluva Good Cheese	NY	Cheese	Koninklijke Wessanan	Neth.	Acquisition/merger	—
	Joan of Arc Co.	IL	Canned fruits, veg.	Raffinerie Tirlemontoise SA	Belgium	Acquisition/merger	38
	Keebler Co.	NC	Biscuits, crackers	United Biscuit Holdings	UK	Additional investment, type unknown	—
	Kibun Corp.	NC	Surimi products	Kibun Co.	Japan	New plant	—
	Kibun Corp.	WA	Surimi products	Kibun Co.	Japan	New plant	—
	Lotte USA, Inc.	MI	Candy, confections	Lotte Co.	Japan	Plant expansion	—
	Moxie Industries	GA	Soft drinks	Peter Eckes	W. Germany	Equity increase	1.3
	Nissin Foods USA	PA	Pasta products	Nissin Food Products	Japan	Plant expansion	2.1
	Paul F. Beich Co.	IL	Candy, confections	Nestle	Switz.	Acquisition/merger	—
	Pearl River Chinese Foods	IA	Poultry processing	Gov't of China	China	New plant	—
	Red Cheek, Inc.	PA	Canned fruits, veg.	H.P. Bulmer Holdings	UK	Acquisition/merger	—
	Red Wing Company	NY	Canned fruits, veg.	Mitsui & Co., Ltd.	Japan	Plant expansion	10
	Sea Galley's Meat Proc.	WA	Prepared meats	Alberta Pork Mktg. Bd.	Canada	Acquisition/merger	—
	Shedd's Food Products	MI	Veg. oil products	Unilever PLC	UK	Acquisition/merger	16
	Supreme Feed Supplements	CA	Animal feed	Mitsui & Co., Ltd.	Japan	Acquisition/merger	6
1985:	Akzo Chemie America	WI	Corn wet milling	Akzo NV	Neth.	Joint venture	—
	Beatrice Ag. Products	IL	Animal feed	Tate & Lyle PLC	UK	Acquisition/merger	43

Mar., '86), an American-owned company, started up a $110-million cheese, protein, butter and alcohol plant operated by Express Foods, Inc., a subsidiary of Grand Metropolitan Ltd. in London, in late 1985 at Corona, CA. Grand Met USA is reportedly building a new $75-million cheese plant at Fresno.

• An $8-million pasta-snack plant was started up in mid-1986 at Joliet, IL by U.K.-based Rank, Hovis, MacDougall.

• A $4-million snack-food plant started in York, PA as a joint venture between Meiji Seika Kaisha and D.F. Stauffer Biscuit Co.

As this story went to press, another giant acquisition—only partly food—was in the works. Unilever, jointly based in the Netherlands and the U.K., had outbid American Brands for a $3.1 billion takeover of

(Continued on page 82)

Year	U.S. Firm	State	Product(s)*	Foreign Investor	Nation	Type Investment	Value ($ millions)
1985:	Breddo Food Products	MO	Bread, bakery products	Centrale Suikermaatschappij	Neth.	Acquisition/merger	—
	Carnation Co.	CA	Dairy products	Nestle	Switz.	Acquisition/merger	3000
	Dahlgren & Co.	MN	Shortening, cooking oils	Gov't of France	France	Acquisition/merger	—
	Early California Foods (olive unit)	CA	Canned fruits, veg.	United Biscuit	UK	Acquisition/merger	73
	Ford Gum & Machinery	NY	Chewing gum	Huhtamaeki OY	Finland	Acquisition/merger	—
	Great Western Sugar (six plants)	TX	Beet sugar	Tate & Lyle PLC	UK	Acquisition/merger	21.5
	Great Western Sugar (Seed div.)	CO	Beet sugar	Cardo AB	Switz.	Acquisition/merger	4.3
	Heim Cheese Co. (plant)	WI	Cheese	Breese Bleu Fromageries	France	Acquisition/merger	—
	Hills Bros. Coffee	CA	Coffee	Nestle	Switz.	Acquisition/merger	—
	Jacobs Coffee Co.	WI	Coffee	Jacobs Suchard AG	Switz.	—	—
	Johanna Farms	NJ	Dairy products, juices	John Labatt Ltd.	Canada	Acquisition/merger	—
	Master's Brewing Co.	IL	Malt beverages	Molson Cos., Ltd.	Canada	—	—
	MJB	CA	Coffee	Nestle	Switz.	Acquisition/merger	—
	Morinaga Nutritional Foods	CA	Milk products	Morinaga Milk Ind. Co.	Japan	—	—
	Nissin Foods USA	PA	Pasta products	Nissin Food Products	Japan	Plant expansion	—
	National Starch & Chemical Corp.	KS	Modified starch	Unilever NV	Neth.	New plant	—
	PMP Co.	IL	Malt beverages	Fujisawa Pharmaceutical	Japan	Acquisition/merger	—
	Premium Beverages	CT	Flavorings	Seagram Family	Canada	Acquisition/merger	—
	Probat US, Inc.	TN	Coffee	Probat-Werke Von Gimborn	W. Germany	—	—
	Stouffer Corp.	UT	Frozen foods	Nestle	Switz.	New plant	100
	Streptococcus Lab	IA	Animal feeds	Bonnierforetagen AB	Switz.	Joint venture	1
	Theresa Friedman & Sons	PA	Canned fruits, veg.	Rank, Hovis, MacDougall	UK	Acquisition/merger	10
	Western Sugar Co.	CO	Beet sugar	Tate & Lyle PLC	UK	—	—

*By SIC Code
Source: U.S. Dept. of Commerce

Chesebrough-Ponds, including its Ragu Foods unit.

Americans still big abroad

Foreign ownership of the U.S. food industry might now exceed U.S. ownership of the food industry abroad, but—according to *U.S. Industrial Outlook, 1987* (figures released December 30 by the Commerce Dept.)—American multinationals currently supply 40 percent of foreign food investment. Of U.S. food investments abroad, only acquisitions are tabulated in this article. But U.S. food processors were striking several other types of deals around the world. Examples:

• Heinz-UFE Ltd., a joint venture between H.J. Heinz Co. and two provincial organizations in China, started-up a baby-food plant at Guangzhou last summer.

• Central Soya Co. on December 3 announced it would acquire seven U.S. soybean processing plants from Belgian-owned Bunge Corp.

• As part of restructuring aimed at fending off a takeover threat by Revlon Chairman Ronald O. Perelman, CPC International announced it would seek a buyer for its European corn-processing operations, which account for about $1 billion in sales—nearly a quarter of CPC's volume.

• Adolph Coors signed a licensing agreement with Japan's Asahi Breweries to brew and distribute Coors in Japan.

• RJR Nabisco started up a joint-venture cracker plant at Beijing, China.

• Fresh Start Bakeries, a unit of Staley Continental, is building a bun plant in West Germany to supply McDonald's restaurants there.

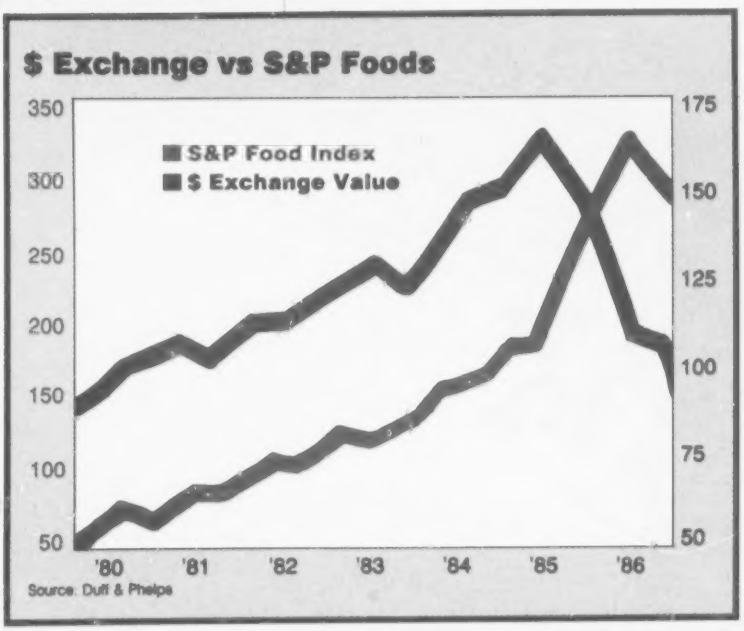
• Pabst entered a joint-venture to set-up a brewery at Shenzen, China, to serve both mainland and Hong Kong markets. According to Industrial Outlook '87, Pabst will dismantle its shut-down plant in New Jersey and reassemble it in China.

• Anheuser-Busch licensed production of Budweiser to Watney's in the U.K., Guiness in Ireland and United Breweries in Demark.

• ADM is reportedly negotiating a joint venture to build a soybean-processing plant in the Soviet Union. Earlier Soviet restrictions against foreign joint ventures have apparently been lifted by the Gorbachev government.

Major U.S. food processors are also boosting capital investment in farms and food plants south of the border to take advantage of lower raw-material and labor costs, and are importing both ingredients and finished-food products from these areas. General Foods, Campbell Soup and Pillsbury, for example, operate plants in Mexico and South America. This "international sourcing" contributes to rising agricultural imports but also contains U.S. consumer prices. Imports such as canned tomato paste, frozen broccoli and cauliflower from Mexico soared earlier in the decade but slumped dramatically in 1986, possibly due to an improvement of the peso against the dollar.

Recent decline of the dollar against major foreign currencies has boosted sales and profits of U.S. packaged-food companies by making their products less expensive abroad, but it is also making foreign investments more expensive.



Global mergermania

A brief review of our accompanying tables reveals several trends:

—Mergermania is not confined to the United States. Acquisition is the fastest route to establishing a food business in another industrialized nation "where there's something to acquire," observes William V. Janis, an economist who tracks the food industry at the ITA. But while that may be true for developed nations, "joint ventures are more common in developing nations such as China."

—The highest percentage of international acquisitions involving U.S. firms were with English-speaking nations. Of the 122 total transactions tabulated here, 46 were with the U.K., Canada, Australia and Ireland. Large English firms such as Unilever, Hanson Trust, Imperial Group, Reckitt & Colman, Tate & Lyle, Rank, Hovis, MacDougall and Cadbury Schweppes were especially active.

(Continued on page 84)

– Swiss-based Nestle, who has been operating here for 87 years and is by far the largest foreign-owned food company with 28,000 employees at 126 different U.S. locations (including Stouffer hotels and restaurants), has been very active in acquiring American firms. Beyond the widely publicized Carnation takeover, Nestle has been involved in six other transactions since 1984, including the acquisition of Hills Bros. and MJB coffee companies. Nestle merged MJB into Hills.

– The Japanese are on the move. Although some Japanese firms have operated here for many years (C. Itoh for more than a century, for example), a 1985 USDA report listed only 12 Japanese-owned food processors operating here as late as 1982. But Japanese activity is accelerating. Since 1984, Japanese companies have been involved in 13 transactions – six acquisitions, four plant expansions, two new plants, one joint venture and one unreported. Largest to date: Suntory's $40-million acquisition of the Chateau St. Jean Winery in California. Kibun has built two surimi plants here; Nissin has twice expanded its pasta plant at Lancaster, PA, where it makes noodle soups. (Japanese firms have reportedly captured 9 percent of the U.S. dry-soup market.)

Some observers envision the day when

Foreign Acquisitions in U.S. Food Industry—1986
(Through mid-November)

Foreign Firm	Country	Acquisition	Location	From (if parent firm)	Products/ Operations	Value ($ millions)
Arabian Int'l. Banking Corp.	Bahrain	Delwood foods	Yonkers, NY	—	Dairy products, chocolate	51
BP Nutrition (Div. British Petroleum)	UK	Purina Mills, Inc.	St. Louis, MO	Ralston-Purina	Domestic animal feeds	—
Burns, Philip & Co.	Australia	Fleischmann's yeast, vinegar brands	Chicago, IL	RJR Nabisco	Yeast, vinegar	—
Cadbury Schweppes	UK	Canada Dry, Sunkist brands	International except Canada	RJR Nabisco	Soft drinks	230
Champlain Ind.	Canada	Keratene HVPs	Winsted, CT	McCormick	Hydrolyzed veg. proteins	—
		Yeast Products, Inc.	Clifton, NJ,	—	Yeast	—
Chr. Hansen Lab.	Denmark	Licenses for acidophilus, low-lactose milk products	—	Gundiach Corp.	Milk products	—
C. Itoh Co.	Japan	Pacific Pearl brand	Edmonds, WA	Seawest Ind.	Canned seafood	—
Gerber Cheese Co. (Sheffield, CT, div. of Thux Co.)	Switzerland	Imported Cheese brands	—	Nestle	Cheese	—
Haarman & Reimer	W. Germany	Aroma ester products	—	Monsanto	Esters	—
Imperial Group PLC	UK	United Biscuit PLC (includes Keebler Co., Specialty Brands Inc.)	UK	—	Cookies, crackers baked goods	1,940
James Cream Co.	Ireland	Freezer Queen Div.	Bells, TN	United Foods	Frozen entrees	35
John Labatt, Ltd.	Canada	Boden Products	Chicago, IL	—	Fruit juices, drinks	—
		Pasquale Foods	Birmingham, Al	—	Pizza, pasta	—
Johanna Farms (Flemington, NJ, sub. of Labatt)	Canada	Atlanta Process.	Allentown, PA	—	Milk products, juices	—

the Japanese apply the same market research savvy to the U.S. food industry which they applied to capture 22 percent of U.S. automobile sales. "What the Japanese can bring to the party...would be improved manufacturing technology and control," said Richard Rakowski, president of the consulting firm of Princeton Technologies, at the 1986 NFPA convention. "But what they don't have—and readily admit—is a very good sense of the American sensory taste. So I'm not concerned about the Japanese in the American market with a manufacturing edge unless and until they have access to American taste. And once they did, I'd be *incredibly* concerned."

Ag exports down

According to USDA, U.S. agricultural exports in 1986 fell to $26.3 billion, down nearly $5 billion from 1985 and more than one-third from the $44 billion peak year in 1981.

Imports rose $1.2 billion from a year earlier to $20.9 billion. Although the nation finished the year in the black with an agricultural trade balance of $5.4 billion, the fact is that for two or three months during 1986—depending on whether you use USDA or Commerce figures—the U.S. actually registered deficits in agricultural trade, the first monthly deficits in 27 years.

(Continued on page 86)

Foreign Firm	Country	Acquisition	Location	From (if parent firm)	Products/ Operations	Value ($ millions)
Koninklijke Wassanen	Netherlands	J. E. Cain Co.	Ayer, MA	—	Pickles, dressings, condiments	—
McCain Foods	Canada	Int'l Fruit of Massachusetts, Inc.	Taunton, MA	—	—	—
National Sea Products, Ltd.	Canada	Booth and Fisher Boy brands	Chicago, IL	Rich Seapack	Frozen seafoods	13
Nestle	Switzerland	Canadian pet-food operations	—	RJR Nabisco	Pet foods	—
Plumrose, Inc. (East Asiatic Co.)	Denmark	Dak Foods	E. Brunswick, NJ	Prestige Foods (Div. Northern Foods, Ltd., UK)	Processed meats	16.8
Reckitt & Colman PLC	UK	Durkee	Cleveland, OH	Hanson Trust, PLC	canned fruits & vegetables, frozen foods, snacks, bakery products, ingredients	120
Rhone-Poulenc	France	Vanillin products plant	Seattle, WA	Monsanto	Vanillin	—
R. T. French (Rochester, NY div. Reckitt & Colman)	UK	Pure Foods Co.	Mamaroneck, NY	—	Beef bouillion	—
Swan Brewing Co.	Australia	Pittsburgh Brewery Co.	Pittsburgh, PA	—	Beer	24
Unilever	UK, Netherlands	Anderson-Clayton SA, Industriae Commercio	Mexico Brazil	Anderson-Clayton	Veg. oil products	109.1
		J. H. Filbert Co.	Baltimore, MD	Central Soya	Margarine, salad dressings	—
Weetabix, Ltd.	UK	Barber's Bakery Co.	Novato, CA	—	Bakery products, snacks	—

Source: The Food Institute

"With this decline in exports, farm product prices have been depressed, land values have plummeted, financial distress has grown, and the cost of federal farm programs...has soared," said Assistant Agriculture Secretary Thompson. Major reasons:

– Supply exceeds demand. World agricultural production capacity exceeds both current and prospective demand.

– Technological progress has raised world productivity generally. "There is plenty of food produced in the world; people go hungry because they lack purchasing power," Thompson pointed out.

– Global recession in the early '80s.

– Price-support programs enacted by foreign nations to boost productivity and exports.

– Export subsidies and import restrictions by foreign producers.

(Continued on page 88)

U.S. Acquisitions in Foreign Food Industry—1984-85

Year	U.S. Firm	Acquisition	Location	From (if parent firm)	Products/ Operations	Value ($ millions)
1984:	Beatrice Foods, Ltd. (Beatrice Foods)	York Ice Cream	Toronto, Ont.	Canada Packers, Inc.	Ice cream, frozen novelties	—
	Beatrice Foods	Minimarche, France & Stute	W. Germany	—	Fruit juices, jams; food distribution	—
	Campbell Soup	D. Lazzaroni S.p.A.	Italy	—	Cookies	—
	Central Soya	Victory Soya Mills	Toronto, Ont.	Proctor & Gamble	Cottonseed, soybean crushing	—
	Coca-Cola	C.C. Soft Drinks, Ltd.	UK	Grand Metropolitan PLC	Coca-Cola bottler	43.3
	ConAgra	Remaining 50% of Country Poultry, Inc.	US	Imperial Foods, Ltd. (U.K.)	Poultry products	18
	CPC Int'l. (Canada Starch Co.)	Zymaize Co., in joint venture with Casco Co.	London, Ont.	John Labatt, Ltd.	Corn starches	—
	Dixie Yeast Corp. (Mgmt. group)	Leveraged buyout	Gastonia, NC	Burns, Philip Ltd. (Australia)	Baker's yeast	—
	McCormick & Co.	Paterson Jenks PLC	UK	—	Specialty foods processor; beverage distributor; broker	53.5
	Nabisco Brands, Ltd. (Nabisco Brands, Inc.)	Associated Biscuits of Canada, Ltd.	Toronto, Ont.	—	Biscuits, cookies	—
	Pillsbury Co.	Goldstein Biskuit AG	W. Germany	—	Frozen cakes	—
		Jaus Frozen Foods	W. Germany	—	Frozen cakes	
	Proctor & Gamble	Outstanding shares of Crush Canada, Inc.	Toronto, Ont.	Great Pacific Industries, Inc.	Soft drink bottling	—
	Proctor & Gamble Gmbh	Rolf H. Dittmeyer Co.	W. Germany	—	Fruit juices	—
	RiT-Chem Co.	Saccharin business of Kum Yang Co., USA	S. Korea	Kum Yang, Ltd.	Saccharin	—
	Smithfield Foods	Patrick Cudahy, Inc.	Cudahy, WI	Prestige Food Corp. (Sub. Northern Foods PLC, UK)	Meat packing	—
	W. R. Grace Co.	Cocoa-processing plant	Singapore	Allied Cocoa Industries	Cocoa	—

—The 1981 Farm Bill, which made it more profitable for American farmers to produce for the Commodity Credit Corporation (CCC) than for export.

"In effect," said Thompson, "the U.S. withdrawal of exports from world markets...supported world prices at a higher level than otherwise would have been found," even with foreign subsidies. The 1985 Farm Bill has started to dismantle this artificial support to let world prices fall by 25 percent or more in 1986, he added.

New environment for the late 1980s: Lower commodity prices in spite of foreign export subsidies; U.S. export incentives "including loans, so the U.S., too, is playing this game." But, he cautioned, we cannot continue trying to outsubsidize one another without pushing costs up sharply.

In the meantime, Thompson continued, the U.S. must:

1.) Boost agricultural R&D. Biotechnology and genetic engineering, for example,

(Continued on page 90)

U.S. Acquisitions in Foreign Food Industry—1984-85 *(Continued from page 86)*

Year	U.S. Firm	Acquisition	Location	From (if parent firm)	Products/ Operations	Value ($ millions)
1985:	Campbell Soup	Raised equity in Arnott's, Ltd. to 10%	Australia	—	Cookies	—
	Farwest Fisheries	Canned salmon operations of Whitney-Fidaigo Seafoods	Seattle, WA	Kyokuyo Co. (Japan)	Canned salmon	—
	Gai's Seattle French Baking Co.	Venice Bakery	Vancouver, BC	—	Bakery products	—
	Genessee Brewing	Fred Koch Brewery	UK	Vaux Breweries PLC	Beer, ale	—
	Kraft	75% of Invernizzi S.p.A.	Italy	—	Cheese, butter, meat products	—
		Everest Group	Australia	—	Pasta, frozen entrees, ice cream, frozen novelties	—
	Larry Ballen (company organized by)	Richardson Mint line, Philadelphia plant of Leaf, Inc.	Bannockburn, IL	Huhtamaki OY (Finland)	Candy	—
	McCormick & Co.	Industria E. Commerci Jimmi, Ltd.	Brazil	—	Sauces, mustard, pickles, condiments	—
	Pillsbury (Pillsbury UK Ltd.)	Fiesta Foods	UK	—	Desserts	—
	Pillsbury (Grupo Olazabal-Pillsbury)	Mac' Ma SA	Mexico	—	Cookies	—
	Pillsbury	R.T. French potato products	Rochester, NY	Reckitt & Colman PLC (UK)	Processed potato products	—
	Prince Macaroni	Aunt Millie's Sauces, Inc.	Congers, NY	Specialty Brands, Inc. (div. of United Biscuit PLC, UK)	Sauces	—
	Sara Lee (Douwe Egberts)	Jacqmotte and Chat Noir coffee brands	Belgium	—	Coffee	—
		Soley coffee brand	Spain	—	Coffee	—
	Sierra Spring Water Co.	Pure Water Industries Western, Ltd.	Edmonton, Alb.	—	Bottled water	—

Source: The Food Institute

Insert 55 on Inquiry Card →

hold great promise for agriculture. Nations who proceed will improve their competitive positions.

2.) Unmask underlying competitiveness. The 1985 Farm Bill "took a large step in this direction" by dropping loan rates to market levels, eliminating a problem which was pricing us out of the international market.

3.) Eliminate acreage-reduction programs, which inflate the value of farmland and boost production costs.

4.) Cut interest rates to farmers, their largest single cost of production. "Real creativity is needed here" to restructure loans in such a way that both farmer and farm-lender can survive.

5.) Eliminate protectionism in those sectors of our economy where it exists so Third World nations with a comparative trade advantage can reduce their massive debts and buy American farm products, where we have a comparative advantage.

'Mirror Image of Japan'

Thompson takes issue with those who see the trade deficit as evidence that the U.S. has lost its competitive edge. Basic problem, says Thompson: The federal deficit, which not only creates the trade deficit but attracts foreign investment and further causes non-competitiveness by absorbing capital which might otherwise be available to the private sector for R&D. "Under floating exchange rates, a country running a net capital inflow must, of necessity, generate a current account deficit of the same magnitude," Thompson explained. "As long as conditions causing a net capital inflow exist, the U.S. will inevitably run a balance of

U.S. Acquisitions in Foreign Food Industry—1986

(Through mid-November)

U.S. Firm	Acquisition	Location	From (if parent firm)	Products/ Operations	Value ($ milions)
Anheuser-Busch	51% of San Miguel Brewery	Hong Kong	—	Licensed bottler of San Miguel, Lowenbrau, Chinese-brand beers	—
Anheuser-Busch	Lamont Winery	DiGeorgio, CA	John Labatt (Canada)	Wine	—
ADM	3 vegetable oil plants	Netherlands, W. Germany	Unilever (UK)	Soybean oil	—
Coca-Cola	Canada Dry bottling operations	Canada	Cadbury Schweppes (UK)	Soft drinks	90
ConAgra	Canadian Harvest Processors, Ltd.	St. Thomas, Ont.	—	Fiber foods from grain	—
CPC Int'l.	Wheat Industries, Ltd.	Cork, Ireland	—	Glucose, wheat gluten	—
Florasynth	Industri Chemica Sostanza Aromatich	Milan, Italy	—	Fragrances	—
Galetti Bros.	Certi-Fresh Foods	Los Angeles, CA	George Weston Co. (Canada)	Frozen seafoods	—
General Foods	20% of President Enterprises	Taiwan	—	Processed foods	30
Leaf, Inc.	Maple Leaf BV	Amsterdam, Netherlands	—	Chewing gum	—
Pepsico	International 7Up bottling operations	Ottawa, Toronto, Ont.	Philip Morris	Soft drinks	246
Pillsbury	Biscuiterie Vinchon-Jeanette	Caen, France	—	Bakery products	—
	Biscuiterie Minimax	Diest, Belgium	—	Bakery products	—
	NV Brockmans Co.	Diest, Belgium	—	Bakery products	—
	Conservas Chisti	Spain	—	Canned vegetables	—

Source: The Food Institute

trade deficit of the same size."

Thompson points to Japan, with its big trade surplus and high savings rate producing capital it can't absorb, as the "mirror image" of the U.S. with its big deficits and low savings: Exchange rates have adjusted as necessary to offset the Japanese surplus with the U.S. deficit.

Daniel E. Shaughnessy, president of the Export Processing Industry Coalition (EPIC), points out one reason for the tremendous decline in the value of agricultural exports: Huge shipments of raw grains as opposed to value-added commodities such as flour, soybean oil and meal, poultry and gluten. Concentration of exports at the low-value end of the scale costs the U.S. dearly in jobs, sales and tax revenues. Basic problem: Foreign export subsidies which have captured major shares of U.S. markets for these value-added commodities. EPIC advocates selectively-targeted subsidized exports as authorized under PL 480 "to signal that the U.S. is committed to protect itself in the marketplace" until – and unless – forthcoming General Agreement on Tariff and Trade (GATT) talks effectively deal with agricultural issues.

USDA projects little improvement in the agricultural picture for 1987, however. Exports should decline slightly to $26 billion, imports to $20 billion for a slightly improved surplus of $6 billion. "We're forecasting increased volume, but it washes out on value," said a spokesman. "It's nothing to crow about."

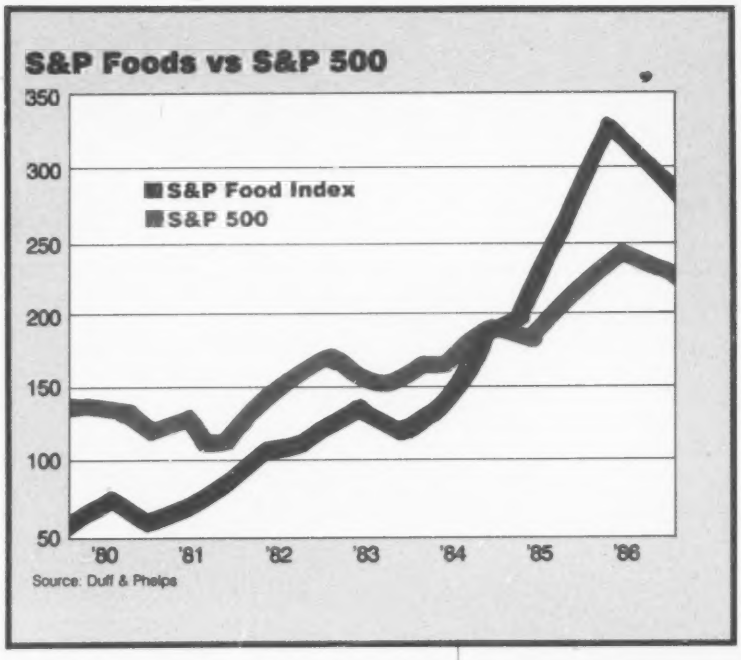
Processed food deficit

According to the Department of Commerce's (DOC) *Industrial Outlook, 1987,* U.S. exports of processed foods and beverages rose 5 percent in 1986 to $10.8 billion but imports rose 2.4 percent to $16.4 billion for an estimated $5.6 billion trade deficit in processed foods – about the same as the adjusted 1985 deficit. (The 1985 deficit, originally estimated at $3.9 billion, was revised because both imports and exports – mainly of processed seafoods – were originally overstated, said a DOC spokesman.)

Five nations accounted for nearly half of the markets for U.S. exports: Japan (20 percent), Canada (9 percent), The Netherlands (9 percent), Mexico (5 percent) and South Korea (4 percent).

The top five suppliers of U.S. imports are Canada (13 percent), Brazil (10 percent), France (7 percent), the U.K. (5 percent), Australia (5 percent). One reason for the processed-foods deficit: More than half the imports were high value-added products, while two-thirds of exports were low in added value.

Processed food exports, however, are of little importance to major food processors, most of whom operate subsidiary companies abroad and have for many years. Heinz, for example, celebrated its 100th anniversary in the U.K. last year. An accompanying table lists the international food sales for major U.S. processors who report these figures.



One reason for growing foreign investment in the U.S. food industry: U.S. food stocks have consistently outperformed the market since 1980, especially during the past year.

Innocents abroad

How do smaller food processors who have never operated overseas break into the global market?

Sources queried by *Food Engineering* concur there is no formula – the international market with its varying cultures, tastes, regulations and trade restrictions is too complex for pat answers. But they agree on two basic approaches: 1.) Do your homework, and 2.) Use all available private and government resources, some underutilized. "You have to evaluate your objectives and your resources, then make the time and financial commitments," says Roger Morf of Zunder Co., acquisition consultant.

Adds Jane Fisher, marketing director for the Dairy & Food Industries Supply Association: "The international market offers tremendous opportunities for food processors willing to spend the time, the money and the effort to go after it. Companies spend a lot of time motivating their domestic sales forces, but the international market is usually an afterthought."

CHINA TRADE

Food companies have found China difficult. But no one ever said a vast opportunity would be easy.

One billion people. By the latest available estimate, the population of China is 1,037,588,000. That's why the government is planning to spend $2-3 billion by 1991 to update its food processing industry. And that's why food companies are so interested in setting up there.

To put China's population into perspective, consider this extrapolation from a leading canmaking company, Ball Corporation. If every man, woman, and child would drink one can of beer—or soda—per day, China would need 800 high-speed can lines. There are only 408 in the entire world.

With such an enormous market and government support, food companies should be clamoring to get into China. Many are, but more have decided to stay away. Is China difficult to reach? Is the effort justified? What exactly does it take to set up a plant in China?

To answer these questions, we contacted several food companies and suppliers to the food industry involved with China.

A look at the market

Although the case histories will describe typical food plants in China, they say little about the Chinese market itself. In a recent edition of the *China Business Review*, Linda Gramling, head of the General Industries program for the National Council for U.S.–China Trade, reviewed what the Chinese want and need.

The Chinese food processing industry has always been quite large, currently ranking third. Food processing is loosely defined. It usually means any business that converts agricultural goods into another edible form. Value-added may or may not come into the picture. However, the Chinese are most interested in high-technology. What one finds in China five years from today will be vastly different.

The State Economic Commission would like to see the output of the food industry multiply five times by the year 2000. In terms of yen, the Commission would like an increase from 60 billion yen in 1980 to 300 billion.

The Chinese have targeted certain foods to achieve this ambitious goal. These foods are processed meats, bean products, edible oils, pastries, sweets, dairy products, preserved fruits, juices, and baby foods (H.J. Heinz is heavily involved with a baby food plant in Guangdong).

Lately, authorities have begun examining the typical Chinese diet. Early findings show it lacking. A survey by Chinese dieticians revealed that while calorie counts

(Continued on page 116)

The Turfan plant in Northwest China is said to be the first to process melon juice. Up to 400 kg of juice concentrate per hour can be made from Hami melons indigenous to the area.

JIM WAGNER,
International Editor

were sufficient, the typical Chinese diet is laden with cereals and deficient in meat, fish, and dairy products. Calcium is a problem—children are currently getting only half the recommended daily amount.

To change these deficiencies, China plans to upgrade its meat and dairy industry. It will start by setting up new grazing areas, improve livestock feed processing, and renovate large and medium size dairies. Some work is underway already. A Chinese-Swedish training center for the production and processing of milk was inaugurated this year in Beijing. The center was carry out product development on dairy products in general since China is so limited, but will also research soy-based products, aseptic packaging and processing, and infant foods. The center is the result of cooperation between the Swedish University of Agricultural Sciences and the Chinese Ministry of Agriculture. In addition, Alfa-Laval donated milking systems for the 250 cows kept at the center, and process equipment for the dairy.

Some statistics

Sometimes the most revealing facts are actual production statistics. For example, only 300,000 tonnes of meat—only 10% of slaughtered animals—are processed annually in China. Milk consumption is on the rise, reaching 4.4 million tonnes in 1984, up 13% from the year before, but remains far behind Europe. Milk formula for infants are being improved with the addition of more vitamin D and iron.

Only 8% of China's fruit crop goes to processing, and spoilage is a major problem. One expert estimates as much as half of China's agricultural output spoiled before reaching consumers. Each year about 300,000 tonnes of defective and wind damaged fruit could be made into high-quality byproducts such as preserves or juices, according to Linda Gramling.

Since May, 1985, the average price for fresh pork in Beijing rose nearly 50% and fresh beef 120%. Meanwhile, canned meat products remained stable. Thus, canned foods are gaining in popularity. The Chinese are growing accustomed to the idea that canning at harvest time keeps the price relatively lower and stabilizes shortages. In 1984, retail sales of canned foods exceeded exports for the first time. Sales hit 878 million yen, compared to 856 million yen generated by exports.

There is an especially telling statistic not related to imports or exports, but the quality of Chinese life itself. Typical Chinese households spend three to four hours a day buying, cleaning, and preparing food. That effort is rapidly becoming burdensome. For instance, when the government shortened the official noon rest period (the *Xiuxi)* from 2-1/2 hours to one, workers suddenly found themselves in need of convenience foods. The demand for instant noodles ran so high, the Beijing Food Industry Corporation boosted its working day from one to three shifts in three months.

Little wonder more food companies are looking at China.

One key to economic growth in a country like China is improved communication and transportation. Another, however, is the level of urbanization, one of the strongest impetuses to a consumer economy because of ease of distribution to large concentrations of population. Below is the way Rock Creek Research in Washington, D.C. sizes up the situation.

CHINA POPULATION GROWTH AND URBANIZATION

	Population (in millions)		Share of total (percent)	
	Rural	Urban	Rural	Urban
1980	796	191	80.6	19.4
1983	784	241	76.5	23.5
1986*	592	466	56.0	44.0
1989*	544	550	49.7	50.3
1995*	516	652	44.2	53.8
2005*	536	767	41.2	58.8

*Estimated